



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,481	12/26/2000	Hyun-Cheol Kim	11349-P66236US0	9012

7590

08/05/2004

JACOBSON, PRICE, HOLMAN & STERN  
PROFESSIONAL LIMITED LIABILITY COMPANY  
400 Seventh Street, N.W.  
Washington, DC 20004

EXAMINER

BUGG, GEORGE A

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 08/05/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/746,481

Applicant(s)

KIM ET AL.

Examiner

George A Bugg

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 8 is/are rejected.
- 7) ☒ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/26/2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 05/25/2004 have been fully considered but they are not persuasive. The Examiner maintains his rejection of claims 1 and 8 explanation follows.
2. Applicant argues that the Uz reference fails to teach or suggest an encoder that sorts out blocks requiring an intra update by using bit stream size info when inter coding is needed, and that Uz only discloses frame budgeting with respect to bit stream size, which refers to rate control, not what is claimed by Applicant in claims 1 and 8. As for what is claimed, summarily speaking, a P frame is supposed to be encoded, however it is too large, or too complex, and therefore an I-frame is encoded in its place. Uz teaches that upon detection of a scene change, which is a result of a large deviation or error from the average motion estimation for a frame, a new GOP is started. It is well known in the art that GOP structures begin with an I-frame. Therefore, Uz replaces a frame, which contains a large error, with an I-frame, or intra update.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2613

2. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,686,963 to Uz et al.

3. With regard to claims 1 and 8, Applicant claims **"A video encoding method comprising the steps of a) selecting an encoding method for each frame of incoming images and dividing the images into blocks of a certain size; b) carrying out either an intra coded block encoding or an inter coded block encoding depending on whether an encoding of a current frame and an inter coded encoding are needed or not, and whether an intra coded block is relevant or not, and sorting out blocks requiring an intra updating by utilizing a bit stream size information for each block if the inter coded encoding is needed; and repeatedly carrying out the step a and the step b to a last frame."** Column 9, lines 13-19, of Uz discloses an inter/intra decision wherein an encoding method is chosen based on frame type for a macro block. It should also be noted that the term "macro block" generally refers to a block of predetermined size. It is the contention of the Examiner that part b of claims 1 and 8 is met by Uz as disclosed in column 11, line 12 through column 12, line 8. Inter coding or intra-coding depending on what is needed, while not specifically recited by Uz, is further dependent on GOP structure and what type of coding is needed for that frame. Furthermore, if a frames activity deviates from an average, and deviation exceeds a threshold value, Uz detects a scene change, at which time a new GOP is started. The scene change is due to large fluctuations, or errors in motion estimation, and therefore is deemed to be an irrelevant frame, thus prompting the beginning of a new GOP. With regard to sorting out blocks, which require intra updating, Uz states

Art Unit: 2613

that the budget for I frames is determined using factors such as intra-activity and VBV occupancy. Since I frames are so large in comparison to P or B frames, it would be obvious to sort them out and use inter coded frames instead, because I frames will place the buffer in an overflow situation. Therefore, bit stream size information is utilized to sort out I frames, to maintain buffer occupancy. Carrying out encoding steps in an iterative fashion, to a last frame, is an obvious embodiment of any encoder. It is the opinion of the Examiner that the Uz reference discloses what is claimed by Applicant both directly and indirectly as suggested above.

#### ***Allowable Subject Matter***

4. Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2613

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George A Bugg whose telephone number is (703) 305-2329. The examiner can normally be reached on Monday-Thursday 7:30 - 6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George A Bugg  
Examiner  
Art Unit 2613

GAB

February 19, 2004

  
CHRIS KELLEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2120